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ABSTRACT

This study examined the relationship between the functionality of training objectives established in Individual Program Plans (IPPs) and Individual Education Plans (IEPs) of persons with severe and profound mental retardation and different service delivery environments. Each training objective in the IPPs and IEPs of 78 individuals was classified according to skill domain and its representation of a functional or nonfunctional behavioral outcome. Subjects included 48 adults (ages 19-57) residing in group homes or large residential facilities and 30 school-aged individuals residing in a large facility. Results indicated: (1) the IPPs of individuals residing in large facilities contained more training objectives than IPPs of individuals living in group homes; (2) no differences in the percentage of objectives rated as functional behaviors were found across the two residential settings; (3) compared to IEPs, IPP objectives contained a higher percentage of functional behaviors; and (4) relationships were found between the Vineland Adaptive Behavior Scales and the extent of functional behaviors in training objectives. (22 references) (Author/JDD)

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Functionality Of Objectives In The Program And Education Plans Of Persons With Mental Retardation

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Abstract

This study examined the relationship between the functionality of training objectives established in IPP's and IEP's of persons with severe and profound mental retardation and different service delivery environments (large residential facility, small group homes, public schools). Each training objective in IPP's and IEP's of 78 individuals was classified according to skill domain and as either representing a functional or nonfunctional behavioral outcome. Results were as follows: a) the IPP's of individuals residing in large facilities contained more training objectives than IPP's of individuals living in group homes; b) no differences in the percentage of objectives rated as functional behaviors across the two residential settings was found; c) IPP objectives contain a higher percentage of functional behaviors as compared to IEP's; d) relationships were found between the Vineland Adaptive Behavior Scales and extent functional behaviors were reflected in training objectives. Implications for curriculum design were discussed.

Applied research with persons with mental retardation recently was directed toward the training of a wide variety of functional living skills. Training procedures were developed for numerous functional skills, such as dining (Matson, Ollendick, & Adkins, 1980), wardrobe maintenance (Matson, Marchetti, & Adkins, 1980), housekeeping skills (Bauman & Iwata, 1977), pedestrian skills (Marchetti, McCartney, Drain, Hooper, & Dix, 1983), use of public transportation (Neef, Iwata, & Page, 1978), eating in restaurants (van den Pol, Iwata, Ivancic, Page, Neef, & Whitley, 1981), emergency telephone use (Risley & Cuvo, 1980), shopping skills (Matson & Long, 1986), and paying bills (LaCampagne & Cipiana, 1987).

Individual Program Plans (IPP's) and Individual Education Plans (IEP's) developed by interdisciplinary teams are the accepted way of planning and delivering treatment services including functional living skills to individuals with developmental disabilities (Bailey, Helsel-DeWert, Theile, & Ware, 1983; Burgdorf, 1980). Legislation (Federal Regulations for Intermediate Care Facilities for Mentally Retarded Persons and PL 94-142) mandates the interdisciplinary team process and the use of IEP's and IPP'S.

Campbell and Bricker (1980) emphasized the use of training objectives which are functional behaviors rather than readiness skills or non-functional behaviors. Adams (1982) has emphasized the use of a functional curriculum as an appropriate educational

model for students with disabilities. This is considered especially important for students with severe handicaps due to the difficulties they have in generalizing newly acquired skills across different stimulus situations (Gaylord-Ross & Holvoet, 1985). Most research on the content and functionality of training objectives has focused on educational programs, schoolchildren, and the IEP (Brown, Branston, Hamre-Nietupski, Pumpion, Certo, & Greenwald, 1979; Reid, Parsons, McCarn, Green, Phillips, & Schepis, 1985; Weisenfeld, 1987). Weisenfeld (1987) and Reid et al. (1985) found a relatively low percentage of the training objectives in IEP's to represent functional behaviors. However, Reid et al. (1985) were able to increase the functionality of the objectives significantly through in-service training and supervisory prompts and feedback.

Similar research among adults in residential settings has not been conducted. Bailey, Helsel-DeWert, Thiele, and Ware (1983) and Bailey, Thiele, Ware, and Helsel-DeWert (1985) systematically studied the interdisciplinary team process in a residential treatment facility. Jacobson (1987) examined IPP goals for adults and found a relationship between intellectual level and variations in the content of the goals.

Landesman and Butterfield (1987) have noted an overall lack of adequate data on how service delivery environments and treatment are related. They have suggested the need to evaluate empirically service delivery models and environments in order to develop a data base on which to guide policy and clinical decisions.

No studies have been directed at determining whether a relationship exists between functional training and the service delivery environment in which training is provided. The present research was designed to systematically determine the relationship of the functionality of training objectives established in the program and education plans of persons with severe and profound mental retardation to several different service delivery environments.

Methods

Subjects

The first set of subjects included 48 adults with a diagnosis of mental retardation with an age range of 19 to 57 years. Twenty-four of the subjects (8 females, 16 males) resided in five, six-bed community homes and 24 of them (8 females, 16 males) resided in two large residential facilities (more than 15-beds). The subjects from the group homes had a mean age of 33.96 years (standard deviation [SD] = 9.50) and a mean IQ of 27.33 (SD = 7.17). The subjects from the two large facilities had a mean age of 32.04 years (SD = 9.61) and a mean IQ of 23.92 (SD = 8.05).

Only subjects with IQ scores within the range of severe or profound mental retardation according to AAMR criteria were included in the study. The subjects from the group homes consisted of all individuals residing in the five group homes meeting this criteria. One of the group homes was operated by the state agency responsible for mental retardation services, one by a local association for retarded citizens (ARC), and three by a private-

for-profit agency. The subjects from the large facilities were randomly selected from all individuals meeting the AAMR criteria for severe or profound mental retardation residing in the two facilities. One of the large facilities (145-beds) was operated by the state and the other (85-beds) by a private, non-profit agency. All the residential programs were licensed as ICF/MR facility providers.

The second set of subjects were 30 school-aged individuals with severe and profound mental retardation who also resided at the 85-bed facility but attended full school-day self-contained special education classes at five different elementary and secondary buildings in the local public school system. Ages for this set of subjects ranged from 8 to 21 years with a mean of 16.20 years (SD = 5.82), a mean Vineland Adaptive Behavior Scale composite score of 26.73 (SD = 10.50) and a mean IQ of 22.07 (SD = 7.70). Comparisons of the subjects from the group homes and the large facilities by age and IQ through the use of *t*-tests revealed no significant differences, indicating that the groups were comparable for statistical purposes.

Procedures

Each training objective listed in the IPP or IEP was evaluated as either "functional" or "non-functional." Criteria were based on that used by Reid et al. (1985) and Brown et al. (1979). Two aspects of functionality were evaluated, whether the materials were functional and whether the activity was functional. For materials to be considered functional, they had to be encountered in the

living situation of and used by nonhandicapped persons of the same age range. The main consideration with materials was that they be as similar as possible to materials that the person uses in typical "normal" environments.

For an activity to be considered functional, it had to meet the criteria for one of the following five skill domains: (a) it would be likely to occur during leisure time among a nonhandicapped population of the same age group as the individual (leisure domain); or, (b) it was part of a vocational task that, once mastered, would be a skill for which the individual could be paid to perform in a partial or full employment situation (vocational); or, (c) it was part of an interpersonal interaction that the individual would perform, at least weekly, or it represented an interaction that would not be unusual for a nonhandicapped person of the same age group to perform weekly (communication/social); or, (d) it was part of an activity that, once mastered, would be likely to occur in a community setting among a nonhandicapped population of the same age group (community living); or, (e) it would be performed by someone for the individual outside of the training situation if the individual did not perform that task for himself or herself (domestic/self-help). To meet the criteria for functionality, the individual had to be working with functional materials (if materials were used) and had to be engaging in a functional activity at appropriate times.

Objectives from the IEP's which were of academic content (addition, spelling, etc.) were excluded from the ratings and

analyses. These objectives represented a very small proportion of the IEP objectives (less than 5%), most likely due to the functioning level of the students.

Evaluators with training experience in working with individuals with severe and profound mental retardation rated each training objective. Two evaluators independently conducted the ratings on 18 of the subjects (23%) in order to determine reliability. Reliability was determined by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100 for each IPP. Reliability estimates ranged from 92% to 100% for each IPP and averaged 98% overall, and ranged from 94% to 100% for the IEP's (mean = 97%) for an overall reliability estimate of .975.

Statistical Analyses

The independent variables included age and gender of the subjects, IQ, Vineland Adaptive Behavior Scale scores, and group setting. The dependent variables included identified functional behaviors, such as leisure, vocational skills, social relations, community living, and domestic self-help. The initial analyses included descriptive statistics and frequency counts, followed by standard non-parametric rho in a matrix of related variables. The final analyses included non-parametric t-tests in which independent variables were divided at the median to provide for tests of significant differences among and between the dependent variables.

Results

Table 1 shows the mean number of training objectives established in the IPP's of the individuals living in group homes and large facilities. Individuals residing in the large facilities had more training objectives established than those living in group homes (x^2 = 70.58, [1,48], $p < .01$). More training objectives were established in the community living (x^2 = 10.99, [1,48], $p < .01$) and domestic (x^2 = 104.21, [1,43], $p < .01$) domains for individuals living in the large facilities when statistically compared with the individuals living in the group homes.

Put Table 1 here

The percentage of functional training objectives established for individuals residing in the group homes and large facilities is shown in Table 2. The percentages were all high, averaging 97.6% overall. The communication/social domain and the leisure domain rated lowest with 90.82% and 97.23% functionality scores, respectively. The chi square statistic revealed no significant differences in the percentage of training objectives rated as functional in the two residential settings or among the various domains.

Put Table 2 here

Table 3 presents the findings on the extent to which training objectives in IEP's and IPP's represented functional behaviors. Several t-tests for related measures were conducted for each domain (except the vocational domain) and the total of all domains. The vocational domain lacked sufficient cases to conduct an analysis.

Put Table 3 here

The IPP's contained a significantly higher percentage of functional training objectives than the IEP's ($t = 3.28$ [$n = 30$], $p < .01$) and the leisure domain of the IPP's also contained a higher percentage of functional training objectives ($t = 4.63$ [$n = 25$], $p < .001$). Although the communication/social, community living, and domestic domains of the IPP's all had higher percentages for functional training objectives than the IEP's, the t-tests were not statistically significant.

Additional statistical analyses were conducted using the Spearman rho in order to determine relationships between subject characteristics and functionality. Rho correlations were determined for both IPP and IEP functionality ratings with age, IQ, and the Vineland Adaptive Behavior Scale, communication, daily living skills, and socialization domains, and composite scale.

The adaptive behavior composite (rho = .39 [$n = 28$], $p < .05$), socialization (rho = .35 [$n = 28$], $p < .05$), and daily living skills (rho = .36 [$n = 28$], $p < .05$) scores were related to the percentage of functional IEP training objectives in the leisure

domain. The percentage of functional IEP vocational domain training objectives (rho = -.52 [n = 12], $p < .01$) and the domestic domain training objectives (rho = -.54 [n = 21], $p < .05$) were inversely related to the Vineland Adaptive Behavior Scale socialization domains score. All other correlations with the IEP training domains were not statistically significant.

The percentage of functional objectives in the IPP communication/social training area was inversely related to the individual's IQ (rho = -.24 [n = 48], $p < .05$). All other correlations between the IPP training domains and the descriptive variables were not statistically significant.

Discussion

The finding that the IEP's and IPP's contained a high percentage of training objectives rated as functional is in contrast to the findings of Weisenfeld (1987) and Reid et al. (1985) for the IEP's of school children. Compared with the present results of functionality ratings of 80% and higher, Weisenfeld (1987) found that only 13% of the IEP training objectives were functional. Reid et al. (1985) found 30 to 37% of the training of students with mental retardation was spent engaging in educational training rated as functional.

Contrary to Weisenfeld (1987) we did not find a consistent negative correlation between the ratings of functionality of the IEP training objectives and students levels of functioning. Adams (1982) has suggested that as levels of functioning gets lower, a

functional curriculum is a more appropriate educational model for students.

The lack of an inverse relationship found in the present study may be due to a ceiling effect based on the generally high functionality ratings. However, there is a suggestion of this inverse relationship if the Weisenfeld (1987), Reid et al. (1985), and our findings are viewed together. In Weisenfeld's study students with the highest level of cognitive functioning (mean IQ = 46.88) had the lowest number of objectives rated as functional (13%). In the Reid et al. (1985) study, 84% of the students functioned within the range of severe or profound mental retardation and 16% functioned at a higher level. They found the IEP training ratings of functionality to be somewhat higher (from 30% to 37%) than Weisenfeld (1987) had found. All of the students in our study functioned within the severe or profound range of mental retardation (mean IQ = 22.07) and the IEP training objectives had the highest functionality ratings (80%). This area needs further study in order to determine the exact relationship between cognitive functioning and functional training in program and education plans.

The social skills of the kinds of students we studied may be an important factor teachers and interdisciplinary teams utilize in establishing IEP training objectives. The Vineland Adaptive Behavior Scale socialization domain was found to be related to the functionality of IEP objectives in the leisure, vocational, and domestic training areas. In the training areas of vocational and

domestic skills individuals with poorer social skills receive more functional training consistent with functional curriculum concepts (Adams, 1982: Brown et al., 1979).

Somewhat surprisingly, a consistent positive relationship was found between the leisure skills training area and the Vineland Adaptive Behavior Scale (socialization and daily living domains and composite score). That is, the more handicapped an individual is, the less he or she is involved in functional leisure time training activities. This appears to be in conflict with functional curriculum concepts and also prevailing views of normalization. The leisure skills training area also was found to contain the lowest percentage of functional objectives (60.68%) overall. The implication of this funding is that additional work is necessary in developing improved functional curriculums for training leisure skills, especially to individuals with severe handicaps.

The finding that the IPP training objectives was rated as more functional than the IEP training objectives indicates that the educational interdisciplinary teams are not implementing a functional curriculum model to the extent that residentially-based interdisciplinary teams are utilizing functional training activities. Further, in keeping with what we found, it is extremely important to utilize training which is functional for individuals with severe and profound mental retardation; as these individuals have great difficulties with stimulus generalization (Gaylord-Ross & Holvoet, 1985). Anything that enhances the quality of their lives is an important step in the right direction.

We recommend that training objectives always be based on functional behaviors for individuals who function within the range of severe or profound mental retardation. Curriculums used by teachers in the schools should be evaluated continuously for the extent that they represent functional training objectives and activities.

The finding that individuals living in the large facilities (as compared to those living in group homes) had more training objectives established by staff personnel is consistent with the findings of Krauss and Seltzer (1986). They found that adults living in institutional as compared to community settings received more treatment services and had fewer unmet service needs. Crissey and Rosen (1986) suggested that the role of large facilities may be changing to one of providing highly intensive treatment and care. Our results and those of Krauss and Seltzer (1986) may be a reflection of such a changing view. Further research is needed to explore this difference systematically. The finding that differences occurred in the community living and domestic training areas indicates that training being emphasized in large facilities is in the areas of self-care and community functioning skills.

Lastly, our work should be viewed as preliminary and suggestive of future research. There is a need to further define the service delivery environments and the nature of training being provided. Not enough is yet known about the complex relationships between environmental settings, functional training for individuals

with severe handicaps, and effective programming and curriculum planning.

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Table 1

Mean Number of Objectives by Domain

Facility	Domains					
	Leisure	Vocational	Communication/ Social	Community Living	Domestic	Total
Group Home	1.13 (.90)	2.46 (2.54)	2.21 (1.59)	1.92 (1.35)	4.82 (2.43)	12.38 (5.10)
Residential Facility	1.33 (.70)	2.25 (1.51)	3.08 (1.89)	3.42 (2.30)	12.63 (4.25)	22.75 (3.33)

Standard deviations in parentheses

Table 2

Percentage Ratings of Functionality by Domain

Facility	Domains					
	Leisure	Vocational	Communication/ Social	Community Living	Domestic	Total
Group Home	94.46 (21.22)	98.96 (5.10)	92.13 (17.24)	100 (0)	100 (0)	97.0 (5.32)
Residential Facility	100 (0)	100 (0)	89.50 (14.61)	99.5 (2.25)	100 (0)	98.17 (2.60)

Standard deviations in parentheses

Table 3

Percentage Ratings of Functionality by Domain

Facility	Domains					
	Leisure	Vocational	Communication/ Social	Community Living	Domestic	Total
Residence (IPP)	92.40 (26.34)	a.	91.08 (14.68)	95.83 (10.31)	100 (0)	97.37 (3.33)
School (IEP)	60.68 (32.61)	75.00 (45.23)	82.28 (22.16)	84.17 (37.04)	87.38 (29.90)	80.33 (27.39)

Standard deviations in parentheses
a. Vocational domain for IPP (n=1)